

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TRUNG T. DOAN

Appeal No. 2002-2159
Application No. 09/652,969

ON BRIEF

Before COHEN, ABRAMS, and STAAB, Administrative Patent Judges.
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 38-40, which are all of the claims pending in this application.

We REVERSE.

BACKGROUND

The appellant's invention relates to a chemical dispensing system for semiconductor wafer processing. An understanding of the invention can be derived from a reading of exemplary claim 38, which has been reproduced below.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Iwata <u>et al.</u> (Iwata)	4,611,553	Sep. 16, 1986
Milina	5,444,921	Aug. 29, 1995

The examiner has rejected claims 38-40 under 35 U.S.C. § 103 as being unpatentable over Iwata in view of Milina.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejection, we make reference to the Answer (Paper No. 12) for the examiner's complete reasoning in support of the rejection, and to the Brief (Paper No. 11) and Reply Brief (Paper No. 13) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

As explained in the appellant's specification, coating materials commonly are applied to semiconductor wafers by flowing liquid coating material onto the top surface of a wafer while it is spinning on a rotating spin chuck. The rotation causes the coating material to flow outwardly over the wafer. In practice, however, some excess coating material tends to collect at and form a bead around the edge of the wafer. This commonly is removed by dispensing a solvent along the edge of the wafer, which then is removed along with the excess coating that had formed the edge bead. The appellant's invention is directed to a device for removing the solvent and the bead.

Independent claim 38 expresses the invention in the following manner:

38. A removal system for a workpiece having an overlying material, comprising:

a nozzle having an extended position and a retracted position, wherein said nozzle is disposed toward said workpiece and configured to dispense a chemical toward said workpiece while in said extended position; and

a suction applicator commensurately movable with said nozzle and defining a port around said nozzle, wherein said suction applicator is configured to withdraw said chemical and said material at a distance from said workpiece.

The examiner has rejected independent claim 38 and dependent claims 39 and 40 under Section 103 as being obvious¹ in view of the combined teachings of Iwata and Milina. It is the examiner's view that Iwata discloses all of the subject matter recited in claim 38 except for the nozzles having an extended and retracted position, but that it would have been obvious to one of ordinary skill in the art to add such a feature to Iwata in view of the teachings of Milina. In this regard, the examiner has taken the position that the motivation for the proposed modification is to "provide ease of loading and unloading the wafer onto the holder" (Answer, page 4). The appellant argues in rebuttal that the examiner's rejection is defective for two reasons. The first of these is that in Iwata the nozzle that dispenses the chemical is not disposed toward the workpiece, as is required by claim 38. The second is that neither of the references teach that the nozzle and the suction applicator be movable commensurately in order to provide ease of loading and unloading, and thus there is no evidence to support the examiner's position that it would have been obvious to do so for the reason advanced by the examiner.

¹The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

Iwata discloses a removal system for a workpiece having an overlying material comprising a suction nozzle (4) having a suction port (6) for removing coating material from the edge parts of the workpiece along with a diluent chemical that has been sprayed onto the coating to facilitate its removal (columns 1 and 2). Positioned within the suction nozzle is a cleaning liquid nozzle (jetted outlet 5) through which a diluent chemical may be injected. Nozzle 5 is “offset from the longitudinal axis of the nozzle [4] and forms an angle of 30° to 85° with respect to the longitudinal axis of the nozzle” (column 1, line 66 et seq.). Thus, it is our view that nozzle 5 is “configured to dispense a chemical toward said workpiece,” as required by claim 38, even though the reference attaches importance to the fact that the orientation of the nozzle creates an eddy stream in the vacuum nozzle so as to clean it during operation. We therefore find the appellant’s first argument not to be persuasive.²

However, we agree with the appellant that there is no evidence in the two references to support the examiner’s position that one of ordinary skill in the art would have been motivated to provide the Iwata system with means for moving the suction nozzle and the applicator nozzle commensurately in order to provide ease of loading

²We note in passing that since no other means for placing cleaning fluid on the workpiece is disclosed, it would appear that the cleaning fluid dispensed from nozzle 5 also impinges upon the workpiece. We base this opinion upon the explanation in column 1 that the invention is an improvement upon prior art nozzles in which a single nozzle element both applies cleaning fluid and removes cleaning fluid along with the material constituting the lateral edge bead (column 1, line 24 et seq.), and that evacuating ports 10 and 10' of the inventive system “are used to remove the lateral edge bead portions after dilution, together with the cleaning fluid from the coated layer” (column 2, lines 34-38).

and unloading the wafer. Not only is such a teaching not explicitly expressed in the applied references, but it appears to us that there is no reason for it to be implicit in the operation of either system, as disclosed. This being the case, the combined teachings of Iwata and Milina fail to establish a prima facie case of obviousness with regard to the subject matter recited in claim 38, and we will not sustain this rejection.

CONCLUSION

The rejection is not sustained.

The decision of the examiner is reversed.

IRWIN CHARLES COHEN
Administrative Patent Judge

NEAL E. ABRAMS
Administrative Patent Judge

LAWRENCE J. STAAB
Administrative Patent Judge

)
)
)
)
)
) BOARD OF PATENT
) APPEALS
) AND
) INTERFERENCES
)
)
)
)
)

NEA:pgg

Appeal No. 2002-2159
Application No. 09/652,969

Page 8

CHARLES BRANTLEY
MICRON TECHNOLOGY, INC.
8000 S. FEDERAL WAY
BOISE, ID 83716-9632